

DETAILED ACTION

1. This office action is in response to the amendment filed April 21, 2008.

Response to Arguments

2. Applicant's arguments with respect to claims 24-27 and 31-36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 24, 26, 32, 33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of McCormick et al. (U.S. Publication No. 2003/0143423).

In regards to claim 24, Guenther et al. ("Guenther") discloses the following:

- a) an integrated circuit comprising a substrate (301) having an upper surface, a perimeter being disposed upon the upper surface and defining a hermetically sealed portion therewithin, at least one circuit element being disposed within the hermetically sealed portion (For Example: See Figure 3);
- b) a hermetic cap (360) comprising a top member and a gasket (364), the cap being configured to cover the hermetically sealed portion and form a hermetically sealed cavity thereover, the gasket comprising opposing first inner and first outer vertical sidewalls depending downwardly from the cap, the sidewalls terminating in and being separated by a bottom edge (For Example: See Figure 3);
- c) a bonding agent (375) disposed between and engaging the substrate and the bottom edge to form a hermetic seal between the cap and the substrate and thereby hermetically seal the cavity, the bonding agent further comprising opposing second inner and second outer sidewalls disposed between the substrate and the gasket, the second inner sidewall being located within the hermetically sealed portion, the second outer sidewall being located outside the hermetically sealed portion (For Example: See Figure 3); and

d) a caulking agent (380) disposed along and engaging at least one of the second inner sidewall and the second outer sidewall (For Example: See Figure 3).

In regards to claims 24 and 26, Guenther fails to disclose the following:

a) the caulking agent extends between and covers substantially all of and is directly in contact with at least one of the second inner sidewall and the second outer sidewall, the caulking agent extending between the substrate and gasket and being configured to seal the cavity and improve the hermeticity of the hermetic seal formed by the bonding agent.

However, McCormick et al. ("McCormick") discloses a caulking agent that extends between and covers substantially all of and is directly in contact with at least one of the second inner sidewall and the second outer sidewall, the caulking agent extending between the substrate and gasket and being configured to seal the cavity and improve the hermeticity of the hermetic seal formed by the bonding agent (For Example: See Figure 1A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent that extends between and covers substantially all of and is directly in contact with at least one of the second inner sidewall and the second outer sidewall, the caulking agent extending between the substrate and gasket and being configured to seal the cavity and improve the hermeticity of the hermetic seal formed by the bonding agent as disclosed in McCormick because it aids in providing further protection from the atmosphere (For Example: See Paragraph 32).

Additionally, since Guenther and McCormick are both from the same field of endeavor, the purpose disclosed by McCormick would have been recognized in the pertinent art of Guenther.

In regards to claim 32, Guenther discloses the following:

- a) the bonding agent comprises gold (For Example: See Paragraph 22).

In regards to claim 33, Guenther discloses the following:

- a) the caulking agent comprises at least one of an amorphous fluorocarbon polymer, a polyimide material, and a benzocyclobutene based material (For Example: See Paragraph 23).

In regards to claim 36, Guenther discloses the following:

- a) the substrate comprises silicon (For Example: See Figure 11).

5. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of McCormick et al. (U.S. Publication No. 2003/0143423) and Wang et al. (U.S. Patent No. 6,717,052).

In regards to claim 25, Guenther discloses the following:

- a) second inner sidewall (For Example: See Figure 3).

In regards to claim 25, Guenther fails to disclose the following:

- a) the caulking agent is disposed along substantially all of the inner sidewall.

However, Wang et al. ("Wang") discloses a semiconductor device that comprises the caulking agent is disposed along substantially all of the inner sidewall (For Example: See Figure 5C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent that is disposed along substantially all of the inner sidewall as disclosed in Wang because it aids in providing protection for the device (For Example: See Abstract and Column 2 Lines 27-50).

Additionally, since Guenther and Wang are both from the same field of endeavor, the purpose disclosed by Wang would have been recognized in the pertinent art of Guenther.

In regards to claim 27, Guenther discloses the following:

- a) second inner sidewall and second outer sidewall (For Example; See Figure 3).

In regards to claim 27, Guenther fails to disclose the following:

- a) the caulking agent is disposed along substantially all of the inner sidewall and outer sidewall.

However, Wang discloses a semiconductor device that comprises the caulking agent is disposed along substantially all of the inner sidewall and outer sidewall (For Example: See Figure 5C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent that is disposed along substantially all of the inner sidewall and outer sidewall as disclosed in Wang because it aids in providing protection for the device (For Example: See Abstract and Column 2 Lines 27-50).

Additionally, since Guenther and Wang are both from the same field of endeavor, the purpose disclosed by Wang would have been recognized in the pertinent art of Guenther.

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of McCormick et al. (U.S. Publication No. 2003/0143423) and Goldmann et al. (U.S. Patent No. 6,459,160).

In regards to claim 31, Guenther fails to disclose the following:

- a) comprises multiple layers of the caulking agent.

However, Goldmann et al. ("Goldmann") discloses a semiconductor device that comprises multiple layers of the caulking agent (142, 152 and 54) (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include multiple layers of the caulking agent

as disclosed in Goldmann because it aids in providing protection for the device (For Example: See Column 7 Lines 30-34).

Additionally, since Guenther and Goldmann are both from the same field of endeavor, the purpose disclosed by Goldmann would have been recognized in the pertinent art of Guenther.

7. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of McCormick et al. (U.S. Publication No. 2003/0143423) and Applicant's Prior Art.

In regards to claim 34, Guenther fails to disclose the following:

a) a thickness of the gasket between the first inner sidewall and the first outer sidewall ranges between about 1 micron and about 10 microns.

However, Applicant's Prior Art ("APA") discloses a semiconductor device that a thickness of the gasket between the first inner sidewall and the first outer sidewall ranges between about 1 micron and about 10 microns (For Example: See Paragraph 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a thickness of the gasket between the first inner sidewall and the first outer sidewall ranges between about 1 micron and about 10 microns as disclosed in APA because it aids in sealing the device (For Example: See Paragraph 3).

Additionally, since Guenther and APA are both from the same field of endeavor, the purpose disclosed by APA would have been recognized in the pertinent art of Guenther.

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of McCormick et al. (U.S. Publication No. 2003/0143423) and Kikushima et al. (U.S. Publication No. 2003/0061693).

In regards to claim 35, Guenther fails to disclose the following:

a) the circuit element is a resonator.

However, Kikushima et al. ("Kikushima") discloses a semiconductor device that has a resonator (3) (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a resonator as disclosed in Kikushima because it aids in providing a communication device (For Example: See Paragraph 4).

Additionally, since Guenther and Kikushima are both from the same field of endeavor, the purpose disclosed by Kikushima would have been recognized in the pertinent art of Guenther.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

/Monica Lewis/
Primary Examiner, Art Unit 2822

July 16, 2008